

Policy and Health In Asia: 20001023 000

Demographic and Epidemiologic Transitions

From 1960 to 1995, health status dramatically improved in Asia and the Pacific. For example, average under-five mortality rates in Asia was more than halved over that period. Despite these aggregate gains, large disparities still exist between countries and within countries, particularly among women and children. In Asia, these disparities are driven by a profound epidemiologic transition and its associated demographic transition: the burden of infectious diseases, childhood deaths, and fertility rates are all declining. In particular, these transitions are having an impact on how policymakers prioritize interventions to deal with the burden of disease, both now and into the future.

Research by John Peabody and colleagues has taken a closer look at these two transitions. They find that while large parts of Asia remain firmly in the grip of poverty, with relatively high mortality and morbidity largely from communicable diseases (e.g., South Asia), other areas are rapidly joining the ranks of more-developed countries, with an epidemiologic profile that tends toward noncommunicable diseases (e.g., East Asia). The result is that governments in much of Asia must grapple on the one hand with the unfinished agenda of communicable diseases and on the other with the new agenda of noncommunicable ones in an aging population.

WHAT ARE THE "TRANSITIONS" IN ASIA?

In demographic terms, nearly three out of five inhabitants in the world live in the Asia and Pacific region. Within Asia, this large population is rapidly migrating to cities. Already, 9 of the world's 14 cities with over 10 million people are in Asia; by 2020, 55 percent of Asians will live in urban centers. However, the population growth rate (between 1985 and 1990) has already slowed to 1.85 percent, compared with earlier growth rates as high as 3.5 and 4.0 percent. Such changes in growth rates are fundamentally influenced by changes in fertility, childhood deaths, and communicable diseases.

This demographic transition has given rise to an aging population. The transition is also the primary determinant of

the epidemiologic change in disease patterns seen in Asia. As the number of older people increases relative to the number of young, diseases associated with insufficient nutrition and infection give way to degenerative diseases. In addition, many diseases are being influenced by concurrent changes in behaviors associated with increased personal (and national) wealth. For example, dietary choices lead to an increased percentage of caloric intake from cholesterol and saturated fats that, in turn, lead to an increased incidence of cardiovascular or cerebrovascular disease. In addition, smoking takes a huge toll in Asia: Eight Asian nations representing 31 percent of the world's population consume 55 percent of the world's tobacco.

WHAT IS THE CURRENT BURDEN OF DISEASE?

What are the implications of these transitions for the current burden of disease—the sum of mortality, morbidity, and residual disability attributed to a disease—in Asia? While Asia has 50 percent of the total world's burden of disease, countries vary on where they are on the economic development and epidemiologic transition spectrum. For example, Bangladesh and Nepal are at one end of the spectrum, while Taiwan and Singapore are at the other.

Leaving China aside for the moment because of its size, when we look at India and the rest of Asia—a heterogeneous group of 49 countries—we see that about 50 percent of this burden is from communicable diseases (such as diarrhea) that could be prevented or reduced with better education and improvements in the household environment or through simple treatments, like oral rehydration therapy. Another 40 percent is from noncommunicable diseases, such as cancer, cerebrovascular disease, and ischemic heart disease, that could be mitigated by decreases in tobacco use and changes in diet, while the final 10 percent is from other causes, such as injuries.

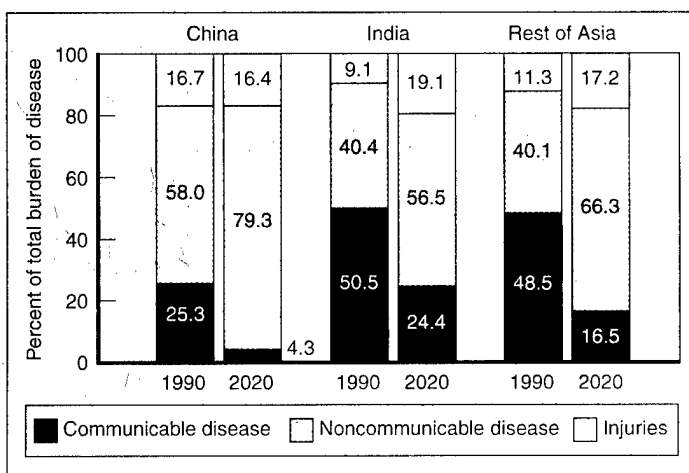
This distribution—50, 40, and 10—indicates that Asia is evenly burdened by both the unfinished agenda of communicable diseases and the growing burden of noncommunicable

diseases. This is different from what we see in the established market economies, driven by noncommunicable diseases, and in sub-Saharan Africa, driven by communicable diseases.

The example of China—25 percent communicable, 58 percent noncommunicable, and 17 percent other—shows the epidemiologic transition in process from the bulk of Asia to those Asian countries that are among the established market economies. China has already completed its demographic transition and is currently at or near replacement fertility (just over two births per woman). Beyond its rapid decline in fertility, China also has a successful health infrastructure; the two have combined to significantly reduce the risk of communicable diseases and the risk of maternal death.

WHAT IS THE FUTURE BURDEN OF DISEASE?

The figure below shows the burden of disease for 1990 (the numbers discussed above) and projected to 2020 for China, India, and the rest of Asia. While the information must be viewed cautiously because of the set of assumptions needed to perform a 30-year projection, the data reveal an important message: In Asia, the burden of communicable disease is expected to be cut by half. By 2020, between 55 and 80 percent of the total burden of disease will be attributable to noncommunicable diseases.



The epidemiologic transition in Asia is very different from the classic transition that occurred in the West. First, the transition in the West was essentially reciprocal—communicable diseases went down and were replaced by a rising

burden of noncommunicable diseases. In the developing countries of Asia, however, there is an overlap, with countries having to face fairly significant burdens of communicable and noncommunicable disease simultaneously.

Second, the transition is occurring much faster in Asia's developing countries than it did for countries in the industrialized West. One reason may be the rapid economic growth and improvements in health care infrastructure that have paralleled the shift in the causes of ill-health.

One of the key drivers of the residual burden of communicable diseases in Asia will be the growth of AIDS. While the percentage of communicable disease accounted for by HIV will decline in China from 1.7 percent in 1990 to 0.1 percent in 2020, it will grow in India from 2.7 percent to 5.3 percent, and in the rest of Asia from 1.5 percent to 3.9 percent over the same period.

IMPLICATIONS FOR POLICY

Many developing countries in Asia are facing both the residual burden of communicable diseases and a rising burden of noncommunicable diseases, without commensurate rises in the economic and logistic means to deal with them. Managing such a transition entails important challenges. To deal with the burden of communicable diseases, Organization for Economic Cooperation and Development (OECD) and non-OECD countries must redouble efforts to address communicable disease burdens. The deaths of over one million children a year in Asia could be prevented if available vaccines were distributed. Public and private investments in research and technologies are desperately needed for drugs and vaccines for malaria, tuberculosis, and HIV.

Future health planners in Asia must also combine this agenda for dealing with communicable diseases with aggressive policies to decrease smoking and finance the higher costs of noncommunicable disease.

Finally, in implementing health policy interventions to deal with either burden, future health planners must ensure that the implementation is based on the best available evidence and analysis and that, where evidence does not yet exist and policy must be implemented, data are collected using the most rigorous studies and research designs possible.

The research summarized in this Policy Brief was carried out within RAND's Labor & Population Program. Results are described in detail in John Peabody et al., Policy and Health: Implications in Asia, Cambridge University Press, 1999, 441 pp., \$44.95 (hardcover), ISBN: 0-521-66164-1. To order, call toll-free 1-800-872-7423 or 212-924-3900. The preparation of this Policy Brief was supported by the Population Matters project. Project publications and other information are available at <http://www.rand.org/popmatters>. For more information on RAND's publishing program, visit www.rand.org/PUBS. RAND® is a registered trademark. RAND is a nonprofit institution that helps improve policy and decisionmaking through research and analysis; its publications do not necessarily reflect the opinions or policies of its research sponsors.

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RB-5036 (2000)